



Department of Pesticide Regulation



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MEMORANDUM

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SUBJECT: GUIDELINES FOR IDENTIFYING PESTICIDES TO BE ADDED TO THE
GROUNDWATER PROTECTION LIST: TITLE 3, CALIFORNIA CODE OF
REGULATIONS SECTION 6800(B)

The Pesticide Contamination Prevention Act (PCPA) (Statutes of 1985, Chapter 1298, Section 1) added sections 13141–13152 to the Food and Agricultural Code (FAC). The purpose of the PCPA is to prevent pesticide pollution of the ground water aquifers of the state that may be used for drinking water supplies.

The PCPA outlines procedures for (1) gathering physical and chemical data on pesticides, (2) establishing specific numerical values (SNVs [threshold values]) for specified types of those data that the PCPA associates with the potential of a pesticide to leach through soil to ground water, (3) identifying pesticides that “exceed” those SNVs, and (4) placing pesticides that “exceed” the SNVs and are applied in specified ways on the Groundwater Protection List (GWPL) (Title 3, California Code of Regulations [3 CCR] section 6800[b]). The PCPA then requires the Department of Pesticide Regulation (DPR) to monitor for the GWPL pesticides to determine if they have migrated to ground water.

Attached are guidelines for revising 3 CCR section 6800(b). It is an update of a similar document, dated May 27, 1998, that was used to revise the GWPL in a 1999 rulemaking.

Guidelines For Identifying Pesticides To Be Added To The Groundwater Protection List (Title 3, California Code of Regulations section 6800[b])

Requirements in the Pesticide Contamination Prevention Act

1. The PCPA applies to pesticides registered for agricultural use. FAC section 11408 defines “agricultural use” to mean the use of any pesticide or method or device for the control of plant or animal pests, or any other pests, or the use of any pesticide for the regulation of plant growth or defoliation of plants. It excludes the sale or use of pesticides intended for home use, use in structural pest control, industrial or institutional use, the control of an animal pest under the written prescription of a veterinarian, or use of a pesticides by local districts or other



public agencies for disease vector control under certain conditions. "Agricultural use" includes use in production agriculture (such as crops, livestock, rangeland, wholesale nurseries, aquaculture, and timber production), and other uses such as on parks, city-owned trees and grass strips, golf courses, cemeteries, roadsides, and other rights-of-way, ditch banks, irrigation canals, and other water bodies. Pesticides registered for use on any of these sites are subject to the data requirements and other provisions of the PCPA.

2. FAC section 13143 requires pesticide registrants to submit, to DPR's director, acceptable data for the following physical and chemical properties of pesticidal active ingredients (AIs) contained in pesticide products registered for agricultural use: water solubility, soil adsorption coefficient, hydrolysis, aerobic soil metabolism, anaerobic soil metabolism, and field dissipation. DPR's director may also require these data to be submitted for other specified ingredients or degradation products associated with AIs in pesticides registered for agricultural use. These physical and chemical properties are characteristics that the PCPA associates with the potential of a pesticide to leach through soil to ground water.
3. FAC section 13144(a) requires DPR to establish SNVs for water solubility, soil adsorption coefficient, hydrolysis, aerobic soil metabolism, anaerobic soil metabolism, and field dissipation. The purpose of the SNVs is to predict which pesticide chemicals are most likely to leach to ground water as a result of normal use by establishing numerical thresholds for their mobility and persistence. A pesticide is thought to have a potential to leach to ground water if it is both mobile and persistent, and is applied in certain ways. Within the context of the PCPA, the mobility of a pesticide chemical is described by its solubility and soil adsorption coefficient; the persistence of a pesticide is described by its hydrolysis, aerobic soil metabolism, anaerobic soil metabolism, and field dissipation half-lives. The SNVs were calculated using a procedure first described in the report, "Setting Revised Specific Numerical Values," published by the California Department of Food and Agriculture, Environmental Hazards Assessment Program (1991). The Environmental Hazards Assessment Program is now part of DPR within the California Environmental Protection Agency. Although an SNV has not been established for field dissipation, field dissipation data are used in the probabilistic modeling procedures used to assess the leaching potential of new products proposed for registration. In 1989, the SNVs were established by regulation in 3 CCR section 6804, and they were last updated in 1993.

The SNVs currently have the following values:

water solubility	> 3 ppm
soil adsorption coefficient (Koc)	< 1900 cm ³ /gm
hydrolysis half-life	> 14 days
aerobic half-life	> 610 days
anaerobic half-life	> 9 days

4. After the SNVs are placed in regulation, they are compared with the physical and chemical data submitted pursuant to FAC section 13143. Pesticide chemicals that exceed the SNVs, or in the case of soil adsorption coefficient are less than the SNV, are posted at least annually on DPR's Web site, as required by FAC section 13144(b)(2).
5. FAC section 13145(d) requires DPR's director to establish a list, called the GWPL, of pesticides that have the potential to pollute ground water. Pesticidal AIs are placed on this list, which is contained in 3 CCR section 6800(b), if they meet the following conditions: (a) "exceed" the SNVs and (b) products containing these AIs are intended to be applied to or injected into the soil by ground-based application equipment or by chemigation, or if the product labels require or recommend that the application be followed, within 72 hours, by flood or furrow irrigation.

Qualifying label language

If AIs that exceed the SNVs are contained in currently registered agricultural use products and any of the following statements are true, then the pesticide will be added to 3 CCR section 6800(b):

1. the pesticide is intended to be applied to the soil by ground-based application equipment
OR
2. the pesticide is intended to be injected into the soil by ground-based application equipment
OR
3. the pesticide is intended to be applied to the soil by chemigation
OR
4. the pesticide is intended to be injected into the soil by chemigation
OR
5. the label of the pesticide requires or recommends that the application be followed, within 72 hours, by flood or furrow irrigation

Meaning of “intended to be applied to or injected into the soil by ground-based application equipment or by chemigation”

This statutory language can be subject to various interpretations. The following regulatory language and examples should be used as guidance in applying this language.

“Applied to soil” shall have the meaning specified in 3 CCR section 6000, except as noted, as follows:

“Applied to the soil” or “applied to the ground” means the labeling of a pesticide product includes terminology such as:

- (a) Soil fumigant
- (b) Soil applied
- (c) Soil treatment product
- (d) Can be used as a soil drench
- (e) Application to soil
- (f) Inject into the soil
- (g) Incorporate in top (x) inches of soil; pre-plant incorporation
- (h) Use on soil for control of soil-borne diseases
- (i) Surface application; band treatment¹, surface blend
- (j) Side dressing both/one side of row and cultivate into soil
- (k) Should be mixed uniformly into top (x) inches of soil
- (l) Pre-emergent to the weed
- (m) Broadcast to the soil
- (n) Apply in seed furrow

Some pesticide products have application instructions for directed sprays to insect nests. Even though some insects are cited on the label as ground-nesting insects, applications of these pesticides are not considered to be applied to the soil.

Chemigation, the application of pesticides in irrigation water, is not automatically considered as a “soil application” of a pesticide. Many pesticides with label language for applications by chemigation are foliar active fungicides; they have no soil activity. These foliar pesticides are not “intended to be applied to or injected into soil . . . by chemigation.”

¹ “Band treatment” can be made to crop plants or to growing weeds as well as to bare soil. Therefore, “band treatments” is insufficient without additional information about application to bare soil to qualify a chemical for listing.

Application of pesticides to turf is considered “intended to be applied to or injected into the soil by ground-based application equipment or by chemigation” if the purpose is to control pests in the soil or the pesticide is said to be taken up, absorbed, or the equivalent by roots of target plants.

Application of pesticides to water

The environmental fate of pesticides applied to water in agricultural fields, open areas, ponds, marshes, sloughs, lakes, and canals and ditches with a soil bottom is considered to be similar to pesticides applied to soil by chemigation and to pesticide applications that are required or recommended by the label to be followed by flood or furrow irrigation within 72 hours after application. Therefore, AIs that exceed the SNVs with registered labels allowing application to water under these circumstances should be added to 3 CCR section 6800(b).